عنوان مقاله:

Phytochemical Analysis of Essential Oil from the Seed of Nicotiana rustica L. and Its Antioxidant and Antimicrobial Activity

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خلاصه مقاله:

In recent years, medicinal plants have been used as sources of natural composition and they are used as alternative for synthetic antioxidants and antimicrobial agents in food and pharmaceutical industry, natural therapy and alternative medicine. The present regard is the first report on the assessment of chemical composition, antioxidant and antimicrobial activity of essential oil from the seeds of Nicotiana rustica L. Isolated from Iran. Tobacco seeds were collected from the tobacco fields in Borazjan city of Iran. Essential oils of the seed of N. rustica were prepared by hydro - distillation using Clevenger type apparatus during ۳ hours after that Qualitative and composition of the oil was determined by GC-MS. The antioxidant activity of essential oil has been investigated by using DPPH assay method. For antimicrobial activity and MIC, MBC and MFC of the essential oil Micro broth dilution technique on eight pathogenic bacteria and two fungi has been used. The results obtained showed the presence of ۲۸ components, in the oil with the highest content of Myristicin (۳۲.۷۵%) and ar-Turmerone (۵.۷۱%). The antioxidant activity of N. rustica oil was IC۵۰ µg/mL = ۲۷.۹۳±۰.۸۳۴. In addition, oil has shown the best antimicrobial activity on Pseudomonas aeruginosa, Bacillus cereus, E. coli, and Staphylococcus aureus. The results of antimicrobial assays indicated that the most of examined microorganisms have been affected in low concentration. Also the essential oil demonstrates strong antioxidant activity but antifungal activity was not observed.

کلمات کلیدی:

Nicotiana rustica, Essential oils, GC/ MS, DPPH, Serial dilution method